

## AN EVALUATION OF DE VIS' FOSSIL BIRDS

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Van Tets, C.F. and Rich, P.V. 1990 3 31: An evaluation of de Vis' fossil birds. *Mem. Qd Mus.* 28(1): 165-168. Brisbane. ISSN 0079-8835.

This paper provides a generalized summary and revision of the numerous fossil birds that were described by C.W. de Vis between the years 1885 and 1911. Most of de Vis' fossil birds may be referred to extant taxa, but as many as six genera and 12 species may prove to be valid.

□ *Aves, Pliocene, Quaternary, Australia.*

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Around the turn of the 19th century Charles de Vis described and named many fossil birds. These were listed in full by Rich and Van Tets (1982, 361-6) with museum catalogue numbers, elements, localities and publications by de Vis and revisers. A checklist by Van Tets (1984) of the extinct fossil birds of Australasia includes the de Vis names. Revision of some of these names is still in progress, and updated versions of the table and checklist will be published in forthcoming editions of the books in which they originally appeared. His fossil material came mainly from southeastern Queensland and northeastern South Australia. In the absence of any radiometric dates, the material was considered by Rich and Van Tets (1981) to be Pliocene to Quaternary in age, on the basis of relative dates for associated mammalian faunas. Three-quarters of a century after de Vis (1911) published *Palaeolestes gorei*, his last fossil bird, it is interesting to reconsider his work. Isolated in Australia, de Vis worked during the period when the international rules of zoological nomenclature were being formulated (Stoll, 1961). The rules (Anon., 1905) were published too late to have any effect on de Vis' names. A typological rather than a population approach prevailed in de Vis' time and the classification of birds was very different from that with which we are now familiar. Unlike Lydekker (1891), de Vis appears to have assumed that all his fossil birds were extinct. His reference collection of modern bird bones at the Queensland Museum was far from complete and was arranged element by element, with rarely more than one specimen of an element per species. A few of his modern bird bones were misidentified. Similarly, the fossils consisted of dissociated bone and bone fragments, with rarely two or more similar specimens of the same species. Hence, it was

impossible from the available modern and fossil bone collections for de Vis to obtain an appreciation of intraspecific variation. The results of our subsequent examinations of the fossil birds of de Vis are discussed below, at the generic level and classified by order.

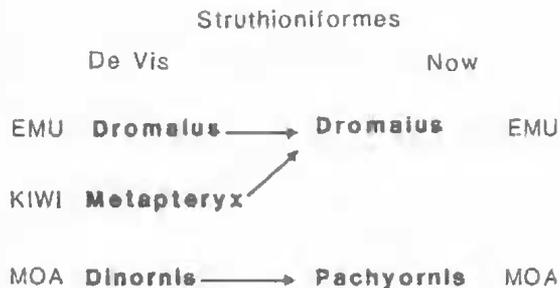


FIG. 1. De Vis' and present generic identifications of fossil Struthioniformes.

### STRUTHIONIFORMES (Fig. 1)

De Vis named two emus (1888a, 1892, 1905), a kiwi (1892) and a moa (1885). Both emus and the "kiwi" are referable to the extant emu (Patterson & Rich, 1987); the moa is indeed a moa, but its supposed Queensland locality is in error, and it has since been shown to have come from New Zealand (Scarlett, 1969). According to de Vis (1891c), a Mr Daniels picked up the moa bone in Kings Creek, Darling Downs, and presented it with other fossils to the Queensland Museum.

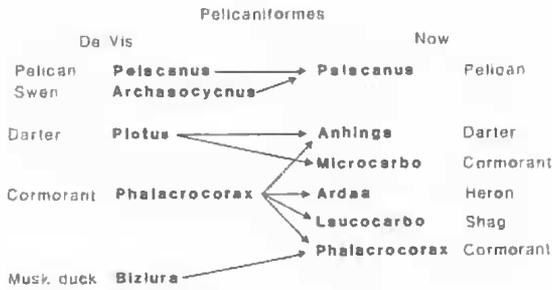


FIG. 2. De Vis' and present generic identifications of fossil Pelicaniformes.

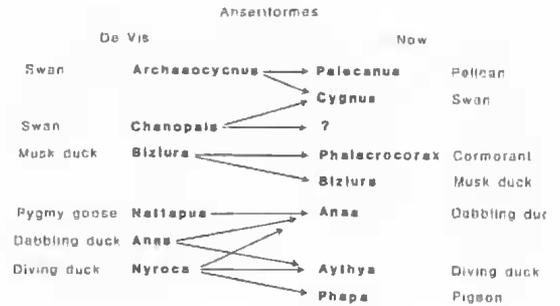


FIG. 4. De Vis' and present generic identifications of fossil Anseriformes.

PELECANIFORMES (Fig. 2)

De Vis named three pelicans (1892, 1894, 1905), two darters (1888a, 1905) and two cormorants (1905). A pelican and a darter may be extinct species, but the rest appear to be referable to extant species (Miller, 1966; Rich & Van Tets, 1981; Van Tets, in prep.).

ANSERIFORMES (Fig. 4)

De Vis named two swans (1905), a musk duck (1905), a pygmy goose (1905), three dabbling ducks and four diving ducks (1888a, 1905). One of the swans may be an extinct species and the identity of the other remains to be determined (Van Tets, in prep.). The remainder of the Anseriformes may be referred to extant species of musk duck, dabbling duck, diving duck (Olson, 1977) and an extant genus of pigeon (Van Tets & Rich, 1980).

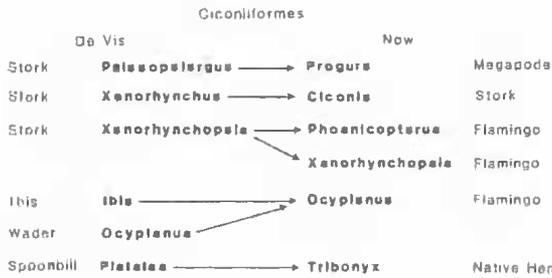


FIG. 3. De Vis' and present generic identifications of fossil Ciconiiformes.

CICONIIFORMES (Fig. 3)

Four storks (1888a, 1892, 1905), a spoonbill (1892) and an ibis (1905) were named by de Vis. One of the storks may be extinct, but the rest represent three extinct flamingoes plus one that is extant overseas (Rich *et al.*, 1987), a locally extinct nativehen (Olson, 1975) and an extinct megapode (Van Tets, 1974).

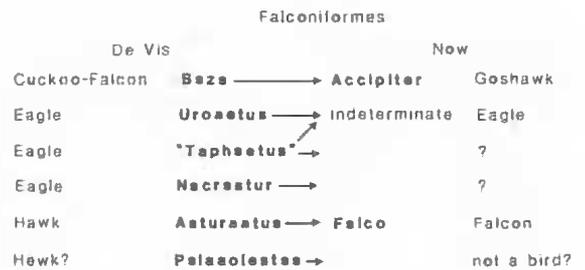


FIG. 5. De Vis' and present generic identifications of fossil Falconiformes.

FALCONIFORMES (Fig. 5)

A cuckoo-falcon (1905), two hawks (1905, 1911) and three eagles (1890, 1891b, 1905) were named by de Vis. The "cuckoo-falcon" appears to be an extant goshawk (Van Tets, in prep.). One of the "hawks" is an extant falcon (Rich *et al.*, 1982), but the other is probably not even a bird. One of the eagles is indeterminate to genus and species, and the other two are under study by the authors.

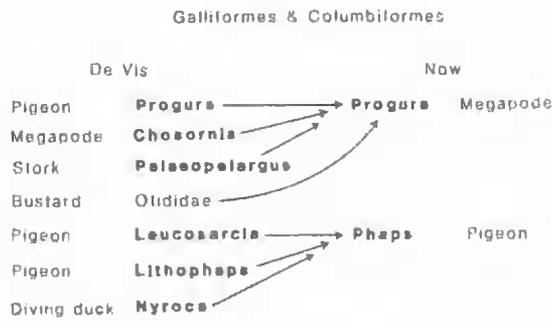


FIG. 6. De Vis' and present generic identifications of fossil Galliformes and Columbiformes.

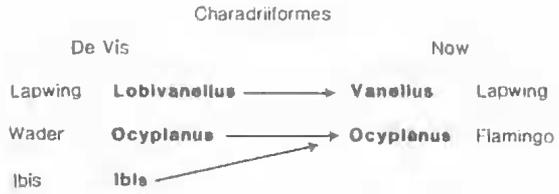


FIG. 8. De Vis' and present generic identifications of fossil Charadriiformes.

GALLIFORMES and COLUMBIFORMES (Fig. 6)

Three pigeons (1888b, 1891a, 1905) and a megapode (1889) were named by de Vis. The megapode and one of the "pigeons" represent an extinct megapode (Van Tets, 1974). The other two pigeons belong to an extant genus (Van Tets & Rich, 1980).

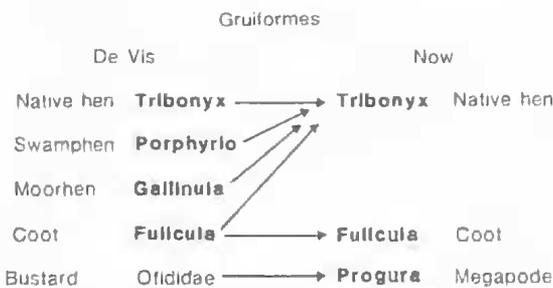


FIG. 7. De Vis' and present generic identifications of fossil Gruiformes.

GRUIFORMES (Fig. 7)

De Vis named a native hen 1892, two swamp hens (1888a, 1892), two moorhens 1888a, 1892), a coot (1888a), and described, but did not name, a bustard (1888a). The native hen, the "swamp hens" and the "moorhens" are referable to a single species of a locally extinct native hen (Olsen, 1975) and the "bustard" to an extinct megapode (Van Tets, 1974). The coot is an extant species of coot (Rich & Van Tets, 1982).

CHARADRIIFORMES (Fig. 8)

De Vis named a wader (1905) and an ibis (1905), and described but did not name a lapwing (1892). The "wader" and the "ibis" are an extinct species of flamingo (Rich *et al.*, 1987), and the lapwing may be referred to an extant form (Van Tets, in prep.).

We conclude that most of the fossil birds named by de Vis may be referred to modern species, though six of 12 genera and 12 of the 49 species that he named are still valid. Some of these, however, are in doubt and deserve further study. Fortunately the types were superbly illustrated and described by de Vis. Almost all of them are still available for study at the Queensland Museum, and a few are at the South Australian Museum (Rich & Van Tets, 1982).

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